Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Fixed Wireless Communications Coalition, Inc.	)	
Request for Modified Coordination Procedures in	)	RM-11778
Bands Shared Between the Fixed Service and the	)	
Fixed Satellite Service	)	

PETITION TO DISMISS OR DENY OF THE SATELLITE INDUSTRY ASSOCIATION

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SUMMARY

The petition for rulemaking filed by the Fixed Wireless Communications Coalition ("FWCC Petition") does not merit Commission consideration. The filing reiterates stale and unsupported allegations the FWCC made in 1999 about the supposed adverse effect of full-band, full-arc licensing of fixed-satellite satellite service ("FSS") earth stations on the terrestrial fixed service ("FS"), and requests radical changes to that licensing policy. The Commission fully considered and rejected these arguments in 2002, and the instant petition supplies no new information that would warrant the expenditure of Commission resources to go over the same ground again.

Most critically, like its 1999 predecessor, the FWCC Petition provides no evidence that current policies harm FS networks: the filing does not contain even a single example of an FS provider being unable to establish a microwave link because of objections from an FSS earth station licensee. To the contrary, the FWCC itself has advised the Commission that coordination procedures for microwave links are successful. Statistics show robust use by microwave networks of the extended Ku-band. This is not surprising, as the Commission's policies for extended Ku-band spectrum limit use by FSS earth stations in order to protect access to the band for FS systems. The FWCC's suggestion that FS applicants are at any kind of disadvantage in siting new links in the extended Ku-band is contradicted both by the FWCC's own conflicting statements and by the reality of Commission policies tilted in the FS community's favor.

The FWCC likewise presents no support for its claim that FS access to C-band frequencies is unfairly constrained. Satellite industry members are committed to working in good faith with the FS community, but they cannot reach agreement with an FS operator that does not pursue coordination. An FS provider seeking to establish a new link on an expedited

basis might rationally choose to pursue unshared spectrum rather than try to reach accommodation with FSS licensees. But by the Commission's and the FWCC's own definition, as long as the FS operator is able to locate frequencies that satisfy its needs, the coordination process must be considered a success.

In contrast to the lack of evidence showing a problem stemming from full-band, full-arc earth station licensing, the record has ample information regarding the policy's public interest benefits. The flexibility of an earth station operator to shift frequencies and/or satellites without going through a lengthy re-licensing process promotes competition, enables satellite operators to provide service following a natural disaster or other emergency, and facilitates service continuity or restoration if a transponder or satellite suffers a problem. Moreover, this flexibility is needed to support resolution of interference issues, achieve and implement coordination with adjacent spacecraft, and allow the provision of occasional use services.

The FWCC's claim that FSS earth station licensing rules should be modified to track those for FS links relies on a false comparison. The rules cited by FWCC that constrain FS operations are designed to promote sharing among microwave providers, and have no relevance in the FSS context. The rules relating to inter-service sharing between FSS and FS networks impose equitable obligations on each type of system: the requirement to choose frequencies and locations so as to minimize the possibility of harmful interference between the services.

The changes in the regulatory framework sought by the FWCC would have serious adverse effects on the satellite industry and would substantially burden the Commission staff. Under the FWCC's framework, earth stations would be licensed only for the frequencies and antenna pointing they currently use, and these restrictions would apply without regard to whether there was any demand for FS facilities in the area. This would needlessly deprive earth stations

in remote areas of critical flexibility with no countervailing benefit. The FWCC proposal would also render the Commission's long-standing Permitted List policy meaningless in the spectrum subject to the FWCC Petition.

By depriving licensees of the authority to quickly repoint antennas and change frequencies, the FWCC's approach would also greatly increase the number of earth station applications that licensees have to file and that the Commission staff has to process. During the inevitable gap between seeking modified authority and receipt of a Commission grant, earth station licensees would be prevented from responding to immediate customer needs.

Under clear precedent, there is no reason for the Commission to embark on a proceeding to evaluate the ill-considered and unsupported FWCC Petition. Because the filing merely restates arguments that the Commission previously evaluated and rejected, the FWCC Petition should be dismissed as repetitive and frivolous under Section 1.401(e) of the rules.

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The Satellite Industry Association ("SIA") requests that the Commission promptly dismiss or deny the above-captioned petition for rulemaking filed by the Fixed Wireless Communications Coalition, Inc. ("FWCC").[1] In 2002, the Commission rejected a similar FWCC petition,[2] and the current iteration provides no evidence that would justify a different conclusion now. The FWCC supplies no concrete data to buttress its assertion that the Commission's full-band, full-arc licensing policy for fixed-satellite service ("FSS") earth stations unreasonably limits terrestrial fixed service ("FS") use of spectrum that FSS and FS have shared successfully for years. The FWCC's complaints about asymmetry between FSS and FS rules ignore both the fundamental differences between the two services' operational and business requirements and the critical need for flexibility to ensure FSS networks can operate efficiently. Moreover, the regulatory approach proposed by the FWCC is unworkable. Because the FWCC filing is

[1] Petition for Rulemaking, Fixed Wireless Communications Coalition, Inc., RM-11778, filed Oct. 11, 2016 ("FWCC Petition").

[2] *FWCC Request for Declaratory Ruling on Partial-Band Licensing of Earth Stations in the Fixed-Satellite Service That Share Terrestrial Spectrum*, Second Report and Order, 17 FCC Rcd 2002 (2002) (the "Termination Order").

"repetitive, frivolous," and does "not warrant consideration by the Commission,"[3] the Commission should expeditiously reject the petition.

BACKGROUND AND INTRODUCTION

The Commission's long-standing earth station licensing policy reflects a deliberate and reasoned determination regarding how to optimize use of satellite networks in response to customer requirements:

> [C]oordination for the entire frequency band and visible arc is our general earth station licensing objective in order to protect our flexibility and that of the satellite operator to change satellite locations and transponder use assignments to best satisfy overall domestic satellite service requirements.[4]

Preserving this flexibility is essential to ensure that satellite operators can recoup the huge sunk investments in space station facilities, to promote competition among satellite operators, to allow use of satellites to respond rapidly to changing customer requirements, to restore service in the event a transponder or satellite experiences a malfunction, and to facilitate coordination among satellite operators.

The instant FWCC Petition seeks radical changes in the rules for earth station licensing in C-band and extended Ku-band frequencies[5] that would undercut these important objectives but provides no foundation for its requests. Instead, the petition simply repeats the generalized and unsupported arguments the FWCC made in a 1999 rulemaking request. That request drew overwhelming opposition, not just from the satellite industry but also from a number of entities

[3] 47 C.F.R. Section 1.401(e).

[4] *American Satellite Corporation,* 72 F.C.C.2d 750 at 754, ¶ 10 (1978).

[5] Specifically, the FWCC asks the Commission to alter the rules for earth station licensing in the 3700-4200 MHz and 5925-6425 MHz conventional C-band spectrum and the 10.7-11.7 GHz and 12.7-13.25 GHz extended Ku-band spectrum. FWCC Petition at 3.

that rely on both FS and FSS facilities. The Commission issued a Notice of Proposed Rulemaking that sought additional input on these matters,[6] making alternative proposals that FSS parties opposed but that the FWCC also argued were unacceptable. Ultimately, the Commission terminated the proceeding without adopting any rule changes.

The Termination Order explicitly stated the grounds for rejection of the relief the FWCC sought. First and most significantly, the Commission determined that the FWCC had failed to demonstrate that FS networks face any disadvantage due to full-band, full-arc earth station licensing:

> Our inability to provide the relief FWCC requests stems from the absence of evidence of the extent to which our current rules have resulted in injury to the terrestrial fixed service community.[7]

The Commission emphasized that although it had expressly requested input from parties regarding "the breadth and nature of sharing difficulties, including the number of cases in which FS and FSS have experienced sharing difficulties, whether the sharing difficulties have occurred in particular band segments, and identification of the specific circumstances,"[8] the record included no concrete data showing a significant problem. The FWCC alleged that it had "anecdotal" evidence of coordination difficulties but did not tabulate such instances.[9] Comsearch estimated based on its experience conducting frequency coordination that "only a small percentage of FS coordinations in the 6 GHz and 11 GHz bands have been unsuccessful

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[6] *FWCC Request for Declaratory Ruling on Partial-Band Licensing of Earth Stations in the Fixed-Satellite Service,* Notice of Proposed Rulemaking, 15 FCC Rcd 23127 (2000) ("FWCC NPRM").

[7] Termination Order, 17 FCC Rcd at 2007, ¶ 12.

[8] *Id.*

[9] *Id., citing* FWCC Reply Comments in IB Dkt No. 00-203 *et al.*, filed Feb. 9, 2001, at 6.

because of interference with FSS stations."[10] The Commission concluded that the record in the proceeding – "a single documented case and references to 'anecdotal evidence'" – was an insufficient foundation for the extensive relief sought by the FWCC.[11]

More recent decisions have confirmed the Commission's finding that FSS licensing does not pose a material obstacle to successful coordination of terrestrial systems. For example, the Wireless Telecommunications Bureau stated in a 2012 report to Congress that "the frequency coordination process has successfully allowed applicants and licensees to work together to resolve potential interference issues" in spectrum including the 10.7-11.7 GHz band shared with FSS, and estimated that the "rejection rate" for requests for coordination in that band is "well under one percent."[12]

The 2012 report was based in part on representations by the FWCC itself that "the number and fraction of requests made to frequency coordinators that fail to mature into applications due to spectrum congestion or interference concerns" is "vanishingly small."[13] The FWCC went on to explain that frequency coordinators assisting with siting of microwave links

[10] Termination Order, 17 FCC Rcd at 2007, ¶ 12, *citing* Comsearch Comments in IB Dkt No. 00-203 *et al*., filed Jan. 8, 2001, at 3.

[11] Termination Order, 17 FCC Rcd at 2008, ¶ 13.

[12] *See Deployment of 11 GHz, 18 GHz, and 23 GHz Microwave Bands – Report Pursuant to Section 6412 of the Middle Class Tax Relief and Job Creation Act of 2012*, Report to Congress, 27 FCC Rcd 14482 (WTB 2012) ("WTB Microwave Report") at 14491-92, ¶¶ 29-30. In fact, the Report noted that "respondents uniformly estimated the 'rejection rate' to be very low or non-existent." *Id*. at 14491, ¶ 25. Notably, the respondents in that proceeding – including the FWCC – represented well over ten thousand licenses for microwave links and tens of thousands of microwave paths. There is no reason to believe that the consensus view of commenting parties regarding these matters would be any different today than it was in 2012. To the contrary, the WTB Microwave Report assessed that "[w]e do not see any reason why the rejection rate would materially increase in these bands in the near future." *Id*. at 14491, ¶ 29.

[13] Comments of the Fixed Wireless Communications Coalition, WT Docket No. 12-156, filed July 16, 2012 ("FWCC Microwave Report Comments") at 2.

"are able to accommodate most, if not all, comers (sometimes after adjusting the technical parameters proposed by the requesting party)."[14] The FWCC described the "regulatory regime for fixed microwave, including the requirement for frequency coordination," as "one of the Commission's major success stories," noting that the process "allows applicants to adjust their frequencies, antennas, polarization, and other variables to fit new links even into crowded markets."[15] In the instant petition, the FWCC makes no attempt to reconcile its current claims that coordination constraints result in microwave users being blocked from use of the 11 GHz band and other spectrum with its directly contradictory statements in 2012.

The Termination Order also faulted the FWCC for failing "to fully and properly take into account the fact that the FSS and FS services have significantly different requirements for access to the electromagnetic spectrum in order to meet their business needs, and these needs must be recognized and accommodated in the context of the entire interference environment."[16] The Commission expressed concern that because the FWCC's proposals did not recognize earth station licensees' need for flexibility, making any changes to the coordination rules could simply "substitute one set of concerns for another."[17]

In its most recent petition, the FWCC inexplicably fails to address either of the significant flaws that led to rejection of its 1999 request for relief. Most glaringly, the current petition provides not even a single example in which the Commission's earth station licensing policies resulted in an FS applicant being unreasonably denied the ability to deploy a new microwave link. Nor does the FWCC take into consideration the fundamental differences

[14] *Id.*

[15] *Id.* at 6.

[16] Termination Order, 17 FCC Rcd at 2007, ¶ 11.

[17] *Id.* at 2008, ¶ 13.

between FSS and FS network configurations and service requirements that drive the regulatory framework applicable to each service. In short, the FWCC has provided absolutely no basis for the Commission to revisit the conclusions of its 2002 Termination Order.

The FWCC has slightly altered its requested relief from the 1999 petition, but the latest proposal would be every bit as damaging to efficient operation of satellite networks. Moreover, the proposal would impose unreasonable burdens on the Commission staff and earth station licensees. Under any rational cost-benefit analysis, the FWCC Petition must accordingly be summarily dismissed.

I. THE FWCC PROVIDES NO EVIDENCE THAT CURRENT COMMISSION POLICIES UNREASONABLY IMPEDE FIXED SERVICE DEPLOYMENT

The FWCC Petition contains absolutely no showing that the full-band, full-arc policy for earth station licensing unfairly burdens the fixed service. This failing is particularly surprising given the explicit statement in the Termination Order specifying that the "absence of evidence" regarding any harm to the FS community from current rules was fatal to the FWCC's request for relief.[18] The FWCC is simply wasting the Commission's time by repeating the same arguments without providing any underlying support. The facts, including the FWCC's prior statements, directly contradict any claim that FS access to spectrum in either the extended Ku-band or the conventional C-band is being unjustly impaired due to earth station licensees' refusal to coordinate.

A. FS Licensees Make Extensive Use of the Extended Ku-Band Pursuant to Commission Policy Granting Them an Express Preference

The FWCC Petition's suggestion that rule changes are needed to improve fixed service access to the extended Ku-band frequencies at 10.7-11.7 GHz and 12.75-13.25 GHz is

[18] Termination Order, 17 FCC Rcd at 2007, ¶ 12.

unfounded. The FWCC provides no actual evidence to support the claim that FS access to extended Ku-band spectrum is unreasonably limited by the need to coordinate with earth stations. To the contrary, the FWCC has explicitly advised the Commission that existing frequency coordination policies applicable to the extended Ku-band are successful in facilitating "highly dense, efficient use of the spectrum by a wide variety of users."[19] Moreover, the FWCC simply ignores the fact that Commission rules contain explicit limitations on FSS use of these bands in order to promote access to the band for terrestrial FS systems. Thus, any asymmetries in the FS and FSS rules applicable to these band segments favor the fixed service.

In fact, a search of the Commission's Universal Licensing Service reveals that there are tens of thousands of microwave licenses currently in force in the 10.7-11.7 GHz ("11 GHz") and 12.75-13.25 GHz band segments today. This is consistent with previous statements to the Commission by the FWCC and others that coordination procedures in frequencies including the 11 GHz band are highly successful. As discussed above, in 2012 the Commission sought input for a report to Congress regarding how many common carrier microwave applications in bands including 11 GHz spectrum were rejected due to the unavailability of spectrum or interference concerns raised by existing licensees. Commenters "uniformly estimated" that the rejection rate was "very low or non-existent."[20] Comsearch indicated that the "percentage of links where it has not been able to find a point-to-point microwave solution when requested is less than one percent," and major users of microwave spectrum reported that they had *never* been unable to locate the microwave frequencies they needed.[21] The FWCC advised the Commission that:

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[19] FWCC Microwave Report Comments at 2.

[20] WTB Microwave Report, 27 FCC Rcd at 14491, ¶ 25.

[21] *Id.* at 14490-91, ¶¶ 25-26 (citing comments in the proceeding filed by the Utilities Telecom Council, Sprint and Clearwire).

> 'only a very small number of initial frequency requests, however defined, go unsatisfied.' FWCC believes that the skill of frequency coordinators and the many options they have available to resolve interference issues results in an extremely small rejection rate.[22]

The robust FS use of extended Ku-band frequencies is not surprising given Commission rules. Specifically, the 10.7-11.7 GHz and 12.75-13.25 GHz bands are subject to footnote NG52 of the U.S. Table of Allocations, which provides that use of the spectrum by geostationary FSS satellites "shall be limited to international systems."[23] That restriction was designed to preserve access to the spectrum for terrestrial fixed service by constraining the number of FSS earth stations that would be entitled to interference protection.[24] To the extent that the Commission has authorized FSS use of these frequencies for domestic communications services, it has done so on an unprotected basis to ensure that an "additional coordination burden would not be placed upon FS operators and that their ability to expand service in the future would not in any manner be restricted."[25]

The FWCC Petition inexplicably mentions neither its own prior statements regarding successful coordination in extended Ku-band spectrum nor the Commission's restrictions on FSS use of these band segments. Given these omissions, the petition's suggestion that rule changes

[22] *Id*. at 14491, ¶ 27 (footnotes omitted), *quoting* FWCC Microwave Report Comments at 8 & 11.

[23] 47 C.F.R. Section 2.106, Footnote NG52. This policy was previously codified in footnote NG104.

[24] *See* WTB Microwave Report, 27 FCC Rcd at 14486, ¶ 10 (the Commission limited FSS use of the 11 GHz band to international systems in order to protect substantial incumbent microwave operations); FWCC NPRM, 15 FCC Rcd at 23153-54, ¶ 60 (only international, intercontinental FSS systems in the 11 GHz band are allowed "in order to limit the number of FSS earth stations operating in the band to permit more use by the Fixed Service").

[25] *EchoStar KuX Corp.*, 20 FCC Rcd 919, 923 (Sat. Div. 2004).

are needed to improve fixed service access to the extended Ku-band does not pass the straight face test.

B. By the Commission's and the FWCC's Own Definition, the C-Band Coordination Framework Is Successful

The FWCC also supplies no support for its repeated suggestions that earth station licensing policies are responsible for any diminished FS use of C-band spectrum. In the 5925-6425 MHz C-band segment used for FSS uplinks, the facts clearly demonstrate that FS use is growing. Evidence presented by Comsearch in another Commission proceeding showed that new FS channels in this band grew by 14% between 2005 and 2009.[26] Moreover, despite its bare assertion that FSS earth station licensing has made coordination of new fixed service links "impossible in most of the country" in the 3700-4200 MHz C-band spectrum used for FSS downlinks,[27] the FWCC presents not even a single example in which an FS operator proposed a new microwave link in this spectrum but was unable to reach a coordination agreement with potentially affected FSS earth station licensees.

Clearly, this is a case of a proposed solution in search of a non-existent problem. The satellite industry takes its sharing obligations very seriously, and SIA members are committed to engaging in good faith negotiation with any fixed service applicant who proposes a reasonable solution to potential interference. The Commission has noted that historically, FS and FSS operators have been able to reach "negotiated agreements to resolve their differences over coordination and use of spectrum for specific facilities in shared bands."[28]

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[26] Comments of Comsearch, WT Docket Nos. 10-153, 09-106, and 07-121, filed Oct. 25, 2010, at 3, Table A.

[27] FWCC Petition at 5.

[28] FWCC NPRM, 15 FCC Rcd at 23137, ¶ 24.

But FSS earth station licensees cannot reach agreement with an FS applicant that never approaches them. Here, the record indicates that FS operators may simply not pursue links in the 3700-4200 MHz band because they can readily use other spectrum available for microwave operations in which coordination with FSS licensees is not required. As SIA has previously observed, FS system operators have access to substantial spectrum that is not shared with FSS networks.[29] The Commission's 2012 report to Congress shows that there are hundreds of megahertz of spectrum available for terrestrial microwave links, only a small fraction of which is shared with FSS networks.[30]

An FS operator might well find it less labor-intensive and more cost-effective to choose frequencies with fewer coordination constraints when establishing new links. Satellite industry members face similar considerations in determining whether to rely on conventional Ku-band spectrum that does not require terrestrial coordination or attempt to coordinate a C-band facility. But these calculations regarding coordination are a necessary element of spectrum sharing – the mere fact that an applicant might prefer unshared spectrum to going through the coordination process does not imply that the coordination framework is unfair.

The FWCC's own prior statements to the Commission explicitly argue that coordination should be considered successful if spectrum is "available for the customer's communications,

[29] *See* Reply Comments of the Satellite Industry Association, the Satellite Broadcasting and Communications Association, the World Teleport Association, and the Aerospace Industries Association of America in IB Dkt No. 00-203, *et al.*, filed Feb. 9, 2001 ("Satellite Industry 2001 Reply Comments") at 6.

[30] WTB Microwave Report, 27 FCC Rcd at 14484, Chart 1. This chart also contradicts the FWCC's claim that "[a]ll FS bands below 10 GHz are shared with FSS" (FWCC Petition at 7), as the chart includes a number of band segments below 10 GHz assigned to microwave operations in which there are no FSS allocations.

although sometimes at added cost or subject to additional delay."[31] In support of this position, the FWCC pleading cited an example in which an operator sought to establish a link using channels in 23 GHz spectrum. The frequency coordinator advised that the only 23 GHz channels in that band available required prior coordination with Federal authorities, but that there were 18 GHz channels available for immediate use, although at a potentially higher cost. The FWCC emphasized that:

> Under any reasonable construction, this scenario must count as a success. The customer was not rejected from 23 GHz, but voluntarily, for its own business reasons, chose to operate on 18 GHz instead. And even if 23 GHz had been completely unavailable, the fact of a successful coordination and ultimate licensing at 18 GHz still puts the case squarely in the success column.[32]

The same FWCC filing highlighted the broad range of mechanisms that can be employed to mitigate interference to or from a proposed new microwave link. In addition to changing frequencies among the bands available to microwave services, these methods include polarization adjustments, taking advantage of natural terrain features or man-made obstructions to reduce an interfering signal, antenna directionality, and negotiating with other users, as well as more fundamental design changes such as moving one or both end points of the link and altering antenna heights or size.[33] The FWCC argued that even though these measures could involve added costs and delay completion of a microwave project, the need to make these adjustments did not detract from the effectiveness of the coordination framework.

[31] FWCC Microwave Report Comments at 10.

[32] *Id*.

[33] *Id*. at 11.

The Commission made clear that it concurred with the FWCC's perspective on these matters. Specifically, the WTB Microwave Report noted that an FS applicant seeking coordination can make a variety of adjustments, including changing frequencies or other system technical parameters, in order to respond to interference concerns raised by another licensee or applicant.[34] The Commission stated that these adjustments are "a normal part of the frequency coordination process," and the need to make changes should not be viewed as a "rejection" of the coordination request.[35] Instead, the Commission indicated that as long as the proposed operation as modified satisfies the applicant's communication needs, the coordination outcome should be considered a success.[36]

Again, the FWCC has provided no proof that even a single coordination request for a C-band fixed service link has been denied – much less improperly denied – by an earth station licensee. But even if the Commission were to accept at face value the FWCC's unsupported assertions that FS use of the 3700-4200 MHz band segment has diminished due to earth station deployment, that does not suggest that changes are needed to the coordination framework. Instead, based on the Commission's findings and the FWCC's own admission, the outcome of coordination should be deemed successful as long as the microwave operator ends up with a spectrum assignment. If FS applicants prefer to expedite deployment by avoiding C-band spectrum subject to sharing constraints, they are certainly free to make that choice. However, such unilateral decisions by individual microwave operators do not imply any failure of existing FS-FSS coordination procedures.

[34] WTB Microwave Report, 27 FCC Rcd at 14489, ¶ 21.

[35] *Id.*

[36] *Id.*

II. FULL-BAND, FULL-ARC EARTH STATION LICENSING PROMOTES IMPORTANT PUBLIC INTEREST OBJECTIVES

The FWCC Petition persists in taking a wholly one-sided view of the differing regulatory frameworks for earth station and microwave licensing. In particular, the filing ignores the crucial public interest benefits of full-band, full-arc earth station licensing, which ensures that satellite networks are used robustly and can respond to customer requirements.

SIA has on numerous occasions highlighted the essential role that satellite networks play in the national and global communications infrastructure[37] and will not repeat that detailed discussion here. To summarize, due to their broad geographic reach and distance-insensitive pricing, satellites allow ubiquitous communications coverage, including in areas that are difficult or uneconomical to serve using terrestrial facilities. Even where a terrestrial alternative exists, the availability of satellite capacity serves as an important competitive option, and satellites supply backhaul for terrestrial networks as well as an essential means to restore service during emergencies and following natural disasters.

The Commission has recognized that full-band, full-arc licensing of earth stations is necessary to permit satellite networks to fulfill these critical functions. Specifically, in the FWCC NPRM, the Commission stated that:

> Our full-band licensing policy promotes important operational objectives in the FSS, in particular by providing earth station licensees the needed flexibility to change transponders or satellites on short notice, and without having to be re-licensed by the Commission, to meet changing operational requirements. . . . Many satellite earth stations employ multiple antennas and regularly communicate with a constantly changing mix of FSS satellites, both domestic and foreign. This type of operation requires access over a wide range of orbital arc and frequencies. . . . In sum, our full-band licensing policy provides all earth station operators the

[37] *See, e.g.*, Comments of the Satellite Industry Association, GN Docket No. 14-177 *et al.*, filed Jan. 15, 2015, at 2-7.

> ability to conform to the constraints placed on the satellite operators and the flexibility to change channels to access available transponder capacity within a satellite network and available capacity on other satellite networks.[38]

As SIA has previously explained, there are other benefits of the existing satellite licensing policy as well.[39]

- Competition: Full-band, full-arc licensing of earth stations allows customers the freedom to switch providers in order to take advantage of more favorable rates or more advanced services. Without this flexibility, satellite service users would be locked into their current space segment supplier.

- Emergency Response: A natural disaster or other emergency may require rapid initiation of new satellite services, especially if terrestrial communications systems have been damaged.

- Restoration: The flexibility to switch traffic to another transponder or satellite is essential to restore service if a facility malfunction occurs. Satellite users for whom reliability is especially critical pay a premium for service protection, with restoration plans that rely on the ability to repoint antennas and reassign frequencies in the event the customer's primary transponder or satellite suffers a failure.[40] If earth station licensees lacked the necessary operational flexibility to make these changes immediately in response to a problem, services would be subject to disruption, and customers would lose the benefit of having contracted for protected service.

- Resolving Interference: Earth station licensing flexibility allows satellite operators to move a customer that is experiencing interference to another band segment in order to correct the issue.

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[38] FWCC NPRM, 15 FCC Rcd at 23145-46, ¶ 40.

[39] *See* Reply Comments of the Satellite Industry Association in WT Dkt No. 10-153, *et al.*, filed Nov. 22, 2010 ("SIA 2010 Reply Comments") at 12-14.

[40] Restoration of services can require a number of complicated measures. For example, when Intelsat lost control of the Galaxy 15 spacecraft for a number of months in 2010, not only did that satellite's traffic have to be rerouted, but operators and customers of other satellites had to take measures to mitigate interference caused by Galaxy 15 as it passed near the target satellite's position. This involved the use of multiple relay satellites and temporary spacecraft relocations. *See* SIA 2010 Reply Comments at 13 & n.51. These changes required frequency agility and the ability to repoint earth stations to maintain service continuity.

- Satellite Coordination: Changes to adjacent satellite operations can require modification of a space station's frequency assignment plan to facilitate coordination among operators.

- Support for Occasional Use Operations: C-band spectrum that is shared with terrestrial fixed services is often used by satellite service customers for short-term purposes such as video contribution/distribution for major sporting events. These short-term video operations rely on transportable antennas that are moved to a location on very short notice – sometimes mere days before the event. Because frequencies for transportable antennas are coordinated just prior to use through an expedited process, the flexibility to access different satellites in any available frequency is critical to their ability to operate. Similarly, the fixed earth station on the receiving end of the transportable antenna's transmission also needs authority to access different satellites in any available frequency.

By allowing earth station operators to quickly access spectrum at locations that are not always known well in advance, and respond to changes in customer demand, emergency situations, facility malfunctions, and the interference environment, existing Commission policies ensure that satellite networks can make the most of their unique ability to serve users over broad geographic areas. Furthermore, earth station flexibility to access a range of satellites is inextricably linked with satellite operators' ability to recover the massive sunk costs of space stations. The Commission has observed that:

> From the beginning of the service, the Commission has recognized the high risk, large capital investment requirements and long lead times characteristic of the domestic satellite industry. . . . The Commission has also recognized the inherent flexibility of [satellite] technology to respond to changing circumstances and growing user needs. This includes the capability of satellites to provide adequate service over a significant range of orbital locations. For such fixed satellites, the entire allocated frequency band is assigned at the outset to insure sufficient capacity to make it economically viable over its lifetime.[41]

[41] *Processing of Pending Space Station Applications in the Domestic Fixed-Satellite Service,*93 F.C.C. 2d, 832, 837-38, ¶ 17 (1983) (footnote omitted).

The FWCC Petition acknowledges some need for latitude to permit satellite service users to take advantage of full-band, full-arc licensing, but even here the FWCC reveals its fundamental misunderstanding of satellite technology. To accommodate flexibility requirements, the FWCC suggests that:

> an FSS applicant can request a waiver permitting it to coordinate its choice of frequencies, azimuths and elevation angles, and have those included in its license without construction deadlines, on a showing that the earth station in question will be operated as part of an overall network with a need to access multiple satellites, including possible satellites not yet identified at the time of coordination and licensing.[42]

What the FWCC fails to recognize, however, is that its waiver formulation describes every earth station. All earth stations operate as part of an "overall network," and no earth station licensee can be assured that it will be able to rely on a single satellite over the long term. Properly applied, therefore, the FWCC waiver would swallow its proposed rule.

In short, the Commission's existing earth station licensing policies reflect strong public interest considerations and are critical to the business model for satellite operations. As SIA has previously demonstrated, the record developed in response to the 1999 FWCC petition:

> makes clear that the Commission's policy of allowing earth stations to be licensed on a full-band, full-arc basis is not simply an arbitrary example of favoritism. It is a reasoned response to the complex, unpredictable, and high-risk environment in which satellite networks operate and represents the only way that bona fide satellite customer requirements can be satisfied in spectrum shared with terrestrial operators.[43]

[42] FWCC Petition at 9.

[43] SIA 2010 Reply Comments at 17.

Radically limiting the flexibility embodied in this existing policy, as has been suggested by the FWCC, would seriously threaten the satellite industry's ability to continue to fulfill its essential role in the communications infrastructure for the United States and the world.

III. THE FWCC PETITION RELIES ON A FALSE COMPARISON

The FWCC Petition is premised on the misguided assumption that fairness requires modifying rules for earth station licensing to more closely track those applicable to FS systems. But the FWCC is making an apples-to-oranges comparison, complaining that FSS networks should be subject to FS rules designed to facilitate *intra-service* sharing among multiple terrestrial networks, not sharing between FS and FSS licensees.

As the Commission has recognized, the framework designed to facilitate *inter-service* sharing between FSS and FS networks is substantially the same for both services.[44] In each case, the relevant rules require an applicant proposing a facility that will use shared spectrum to select sites and frequencies that will minimize the possibility of harmful interference between the sharing services.[45]

In contrast, the FS rules discussed in the FWCC Petition, which limit the frequencies and azimuths that can be coordinated for new terrestrial links, are needed to allow numerous point-

[44] FWCC NPRM, 15 FCC Rcd at 23134, ¶¶ 17-18.

[45] *See* 47 C.F.R. Section 25.203(a) ("Sites and frequencies for earth stations . . . operating in frequency bands shared with equal rights between terrestrial and space services, shall be selected, to the extent practicable, in areas where the surrounding terrain and existing frequency usage are such as to minimize the possibility of harmful interference between the sharing services"); 47 C.F.R. Section 101.101(d)(1) ("In engineering a system or modification thereto, the applicant must, by appropriate studies and analyses, select sites, transmitters, antennas and frequencies that will avoid interference in excess of permissible levels to other users.").

to-point microwave licensees to co-exist within a limited geographic area.[46] These limitations cannot be reasonably applied to fixed-satellite service networks, which operate on a radically different geometry. As the FWCC acknowledges, satellite networks transmit and receive in different bands and are able employ the same spectrum if they are pointing to different satellites, allowing multiple earth stations to operate within the same geographic area without creating interference to each other.[47]

Because geostationary satellite networks positioned two degrees apart can reuse the same spectrum, limitations on the pointing and frequencies employed by satellite earth stations are not needed to facilitate robust frequency utilization. Instead, imposing such limitations would significantly impede satellite networks' ability to fully exploit their spectrum and orbital resources, contravening the public interest.

IV. THE FWCC'S PROPOSED REGULATORY FRAMEWORK IS UNWORKABLE

As discussed above, the FWCC Petition presents no possible justification for the Commission to reconsider its policies in favor of full-band, full-arc earth station licensing. In addition to being substantively without merit, the alternative rule formulation proposed by the FWCC would compromise established Commission policies and impose massive burdens on both Commission staff and earth station licensees.

A. The FWCC Proposal Would Constrain FSS Operations Regardless of FS Demand

Under the measures proposed by the FWCC, an earth station operator's ability to ensure it has licensed access to the full spectrum band could be eliminated even in the absence of any

[46] *See, e.g.*, Comments of Comsearch, WT Docket Nos. 10-153, 09-106, and 07-121, filed Oct. 25, 2010 at 7, Figure 1 (depiction of the hundreds of microwave channels in 6 GHz spectrum licensed in the Los Angeles metropolitan area).

[47] FWCC Petition at 4.

material demand for use of the spectrum by FS operators in the vicinity. The FWCC suggests that earth station licensees should be allowed to maintain license authority only for combinations of frequency segments and pointing specifications actively in use; any combination that is unused for more than 90 days would be deleted from the earth station license.[48] Thus, no matter how well an earth station applicant satisfies the requirements of Section 25.203(a) by choosing an antenna site that optimizes its ability to share with terrestrial systems, it would gain absolutely no benefit – its license would still be restricted to a limited amount of spectrum and a limited segment of the orbital arc. Any change to its operations that mandated communication with a different satellite location and/or use of a different frequency segment would require the earth station operator to file a license modification application.

As SIA and others explained during the prior rulemaking proceeding, the adverse consequences on earth station operations stemming from these restrictions would be significant. Specifically, a remotely located earth station would be permitted to license only limited spectrum and point its antenna in limited directions:

> making it difficult or impossible to restore service in the event of a facility outage and impairing its ability to respond to an increase in customer demand, even if there was no interest in access to the spectrum for terrestrial operations. Similarly, a new earth station coming into an area where there are teleports or other earth station facilities with full-band operations would be permitted only limited access to spectrum even though the other earth station operations would preclude introduction of new fixed links. Thus, the FWCC's plan would deprive earth stations of access to spectrum regardless of whether the spectrum was needed by or useful to fixed services.[49]

[48] FWCC Petition at 8.

[49] Satellite Industry 2001 Reply Comments at 19.

For example, General Communications, Inc. ("GCI") relies on satellite capacity to deliver communication and technology services to Alaska.[50] However, under the FWCC's plan, if GCI applied for a new earth station to serve a remote Alaskan bush village, its license would cover only the active frequencies and antenna pointing. As a result, GCI's ability to switch transponders or satellites quickly as needed to provide service continuity would be jeopardized, even if no FS facilities existed or were likely to be deployed anywhere in the vicinity.[51]

Moreover, GCI or a similarly situated licensee would be faced with the possibility that precisely when it needed to swiftly change its operational parameters to avoid service disruption – for instance, to respond to an unexpected satellite failure or resolve an interference issue – it would first need to go through a license modification procedure. Under the FWCC's approach, a new coordination might not be required if the original coordination notice took advantage of the proposed ability to include potential growth capacity.[52] However, even in that case, the ability to continue or restore service would have to await the grant of Commission authority.

The FWCC has complained that deferring consideration of whether an earth station should be allowed continued access to shared frequencies until an FS applicant actually sought use of the spectrum, as the Commission had proposed in the FWCC NPRM, was unacceptable because the "dispute over denial of coordination would arise at the worst possible time: when

[50] *See* Reply Comments of General Communication, Inc. in IB Dkt No. 00-203, *et al.*, filed Feb. 10, 2001 at 2-3.

[51] *See id.* at 5-10 (describing the importance of satellite services in providing basic lifeline communications in Alaska and the need for continued earth station licensing flexibility to allow service reliability).

[52] FWCC Petition at 8-9.

the FS station is attempting to file an application and commence operations."[53] SIA submits instead that the "worst possible time" to face a delay in spectrum use is when maintaining service continuity requires an immediate change in antenna pointing or frequency use. The proposals set forth in the FWCC Petition would subject earth station licensees to exactly this worst-case scenario.

In rejecting the FWCC's 1999 proposal, the Commission highlighted the problems with this approach. In particular, the Commission noted that a critical aspect of full-band full-arc licensing is that it grants "earth station licensees the needed flexibility to change transponders or satellites on short notice, *and without having to be re-licensed by the Commission*, to meet changing operational requirements."[54] The same rationale requires rejection of the most recent FWCC formulation.

B. The FWCC Plan Would Render Permitted List Authority Meaningless in Spectrum Shared Between FSS and FS Operations

Under the Commission's existing earth station licensing policy, if an applicant's proposed operations in specified bands comply with standard technical parameters, it can seek "Permitted List" authority. The Permitted List includes all U.S.-licensed spacecraft as well all foreign-licensed satellites that have been granted market access by the Commission, and an earth station with this designation can therefore communicate with all such satellites within its coordinated arc. The Commission has concluded that the flexibility to access multiple satellites promotes competition and fulfills U.S. market access commitments.[55] Indeed, in its last revision

[53] *Id.* at 10.

[54] FWCC NPRM, 15 FCC Rcd at 23146, ¶ 40 (emphasis added).

[55] *See Amendment of the Commission's Regulatory Policies to Allow Non-U.S. Licensed Satellites to Provide Domestic and International Service in the United States*, First Order on Reconsideration, 15 FCC Rcd 7207, 7214, ¶ 16 (1999) (adopting process that allows earth stations to communicate with U.S.-licensed and approved foreign spacecraft on a streamlined

of the Part 25 rules, the Commission added a number of frequency bands to the conventional C- and Ku-band spectrum originally designated for Permitted List authority.[56]

If the FWCC proposals were to be adopted, however, this flexibility would no longer exist in the conventional C-band, or in the 10.95-11.2 GHz and 11.45-11.7 GHz bands that are also subject to the petition. Instead, an earth station operator would be limited to communicating in frequencies and at orbital locations that are within the scope of its license as circumscribed by the usage requirements the FWCC sets forth. These constraints would seriously undermine the pro-competitive public policy goals that are the foundation of the Permitted List framework.

C. The FWCC Proposal Would Substantially Burden Commission Staff and Impose Significant Additional Costs on Earth Station Licensees

The radical changes to existing earth station licensing policies sought by the FWCC would exponentially increase the number of applications that earth station licensees have to file and Commission staff members have to process. Instead of conferring substantial flexibility, an initial earth station license grant would be much more restricted in its scope, requiring the licensee to seek modification of its authority any time it sought to use a new frequency or antenna pointing. A licensee needing to make a time-sensitive change would almost certainly seek special temporary authority pending action on the modification, further multiplying the

basis will "provide authorized earth station operators the flexibility to access any satellite authorized to serve the United States").

[56] *See Comprehensive Review of Licensing and Operating Rules for Satellite Services,* Second Report and Order, 30 FCC Rcd 14713, 14795, ¶ 249 (2015) (expanding the scope of the Permitted List to include "all GSO FSS space stations licensed or granted U.S. market access in bands where we will have routine licensing criteria for earth stations, *i.e.*, the extended and conventional C-bands, the extended and conventional Ku-bands, the conventional Ka-band, and the 24.75-25.25 GHz band").

number of filings that would have to be submitted and processed.[57] Moreover, the FWCC plan would also require license changes to delete frequencies or antenna pointing specifications unused for more than 90 days.[58]

Even if the changes requested by FWCC were implemented prospectively only, the resulting growth in application submissions would be substantial. However, the FWCC seems to contemplate that the Commission would also undertake steps to retroactively modify existing earth station licenses to conform to its proposed policies. That would add the burden of reissuing more limited versions of the thousands of current conventional C-band and extended Ku-band earth station licenses and registrations to what would already be a staggering workload.

As discussed above, the FWCC approach would constrain the licensing authority of earth stations without regard to whether nearby fixed service use was likely or even possible. Given the FWCC's failure to provide any documentation that the current rules harm FS networks, the Commission must conclude that the overwhelming costs of the rule changes FWCC requests would far outweigh any speculative benefits.

V. COMMISSION PRECEDENT REQUIRES DISMISSAL OF THE FWCC PETITION

Under Section 1.401(e) of the rules, petitions for rulemaking that are "repetitive, frivolous, or which plainly do not warrant consideration by the Commission may be denied or dismissed."[59] The FWCC Petition fits squarely within that description.

[57] In the case of a time-sensitive need that occurs over the weekend or on a holiday, the FSS licensee would have to wait until the next business day to even file its request, potentially impacting service continuity for hours, if not days.

[58] FWCC Petition at 8.

[59] 47 C.F.R. Section 1.401(e).

The current filing presents substantially the same arguments as the FWCC's 1999 petition for rulemaking. That petition was thoroughly considered and ultimately rejected by the Commission. The Commission made clear that the absence of supporting evidence required termination of the original proceeding, but the FWCC has presented no additional data to support its claims here. Moreover, the petition's allegations regarding the efficacy of current coordination procedures in facilitating robust spectrum use by the fixed service community are contradicted by FWCC statements in other, quite recent, proceedings.

In similar circumstances, the Commission has dismissed a petition for rulemaking without even submitting it for public comment, advising the petitioner that:

> The rule changes you propose were previously rejected by the Commission. Your petitions do not demonstrate or even suggest that any relevant circumstances have changed such as to merit reconsideration of these decisions.[60]

The Commission has made clear that its "resources are ill spent in considering repetitious pleadings."[61] Given the FWCC's failure to present any new information supporting its claims, any further deliberation regarding the FWCC Petition would be a needless waste of Commission resources.

[60] *Willison H. Gormly*, Letter, DA 15-777, 30 FCC Rcd 7096, 7096-97 (WTB 2015). *See also Glen E. Zook*, Letter, DA 12-795, 27 FCC Rcd 5317, 5318 (WTB 2012) ("Zook Letter") (petitioner's latest submission requesting previously denied relief provides "no new facts or changed circumstances warranting further consideration" and is dismissed as repetitive).

[61] Zook Letter, 27 FCC Rcd at 5318 n.9, *quoting The O.T.R.H., Inc.*, Order, 1 FCC Rcd 573, 573 n.1 (1986).

VI. CONCLUSION

For the foregoing reasons, SIA urges the Commission to promptly dismiss or deny the FWCC Petition.

Respectfully submitted,

THE SATELLITE INDUSTRY ASSOCIATION

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January 9, 2017

CERTIFICATE OF SERVICE

I hereby certify that on this 9th day of January, 2017, I caused a true copy of the foregoing "Petition To Dismiss Or Deny Of the Satellite Industry Association" to be sent by first class mail, postage prepaid, upon the following:

Andrew Kreig
Co-Chair, Fixed Wireless
Communications Coalition, Inc.
Eagle View Capital Strategies
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/s/ Charity Weeden
Charity Weeden